



Glenn Research Center



Numbers and Sizes of Flame Balls

Gas mixtures with less fuel produce fewer flame balls.

Why? When you fire the spark, the excess enthalpy makes the flame balls behave like a richer mixture than they really are. Being in an unstable mixture, the flame balls split. The higher the initial fuel concentration, the farther the push into an unstable region and the longer the time there, so the more flame balls. Eventually this excess enthalpy is smeared out by conduction and lost by radiation.

